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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/667,501

09/23/2003

Tsugio Okamoto

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09/22/2004

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EXAMINER

CULLER, JILL E

ART UNIT

PAPER NUMBER

2854

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,501

Applicant(s)

OKAMOTO, TSUGIO

Examiner

Jill E. Culler

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20031110.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 35', in Fig. 2.

The drawings are also objected to, because it appears the reference numeral 18 at the bottom of Fig. 2 should be 18a instead.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 2-10 are objected to because of the following informalities:

In claim 2, on line 4, it appears that the phrase "that has" should be "having" instead.

In claim 8 on line 2 and claim 9, on line 4, the use of “a couple” is awkward.

Using the word “two” instead would improve the readability of the claim.

In claim 10, on line 10, it appears that the word “is” should be “are” instead; and on line 12, it appears that “dimeters” should be “diameters”.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,315,468 to Kishida et al.

With respect to claim 1, Kishida et al. teaches an ink-jet recording apparatus comprising: an ink-jet head, 5, 6, that has an ink ejection surface on which a plurality of nozzles are arrayed; a medium carrier, 3, that forms a carrying surface on which a record medium, 4, is carried; a carriage, 1, mounted with the ink-jet head such that the ink ejection surface confronts the carrying surface; see column 4, lines 43-49; a carriage drive mechanism that includes a plurality of parallel guide rods, 2A, 2B, supporting the carriage and extending across the direction where the record medium is carried by the medium carrier, the carriage drive mechanism reciprocating the carriage along the guide rods; and a guide shift mechanism, 30, that shifts the plurality of guide rods in a

direction where the gap between the ink ejection surface and the carrying surface varies. See column 6, lines 21-46.

With respect to claims 2 and 8, Kishida et al. teaches the guide shift mechanism comprises rotatable rotators, 31, 32, that support the guide rods at eccentric positions, each guide rod supported by a couple of the rotators, each of the rotators that has a center of rotation at a position different from the eccentric positions, and wherein the rotation of the rotators causes the guide rods to shift. See column 6, lines 36-46.

With respect to claims 3 and 4, Kishida et al. teaches the guide shift mechanism further comprises a torquer, 43, that imparts a torque to each of the rotators associated with the plurality of guide rods. See column 7, lines 11-29.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kishida et al. in view of U.S. Patent No. 6,629,787 to Lee et al.

Kishida et al. teaches all that is claimed, as in the above rejection of claims 1-4, and 8 except that the torquer is a slidable bar, the rotators are gears, and the bar has a rack engaging with each of the gears.

Lee et al. teaches a gap adjusting mechanism which has a torquer in the form of a slidable bar, 143, which engages with a gear, 146 to impart movement which results in a shift in the location of the print head. See column 8, line 57 - column 9, line 3.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use the slidable bar of Lee et al. to torque the gears of Kishida et al. in order to have more detailed control over the adjustment of the gap.

7. Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Kishida et al. in view of Lee et al., as applied to claims 5-6 and 10 above, and further in view of U.S. Patent No. 4,463,359 to Ayata et al.

Kishida et al. and Lee et al. teach all that is claimed, as in the above rejection of claims 5-6 and 10, except that torquer is provided with a knob.

Ayata et al. teaches a sliding torque rod which is provided with a knob for manual operation. See column 9, lines 7-19 and Figures 58-59.

It would have been obvious to one having ordinary skill in the art at the time of the invention to further modify the mechanism of Kishida et al. to have an adjustment knob, as taught by Ayata et al. to provide for precise, manual adjustment of the torquer.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kishida et al. in view of JP-07032680 to Imoto.

Kishida et al. teaches all that is claimed, as in the above rejection of claims 1-4 and 8, except that the carriage drive mechanism includes: pairs of pulleys each having

a rotational axis orthogonal to the guide rods, a couple of pulleys making up each pair being separated from each other along the guide rods; and a plurality of carriage drive belts each wrapped around the pair of pulleys.

Imoto teaches a carriage drive mechanism including pairs of pulleys, 23, 24, 26, 27, each having a rotational axis orthogonal to the guide rods, a couple of pulleys making up each pair being separated from each other along guide rods, 3, 4, 9, 10; and a plurality of carriage drive belts, 18, 19, each wrapped around the pair of pulleys.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the invention of Kishida et al. to use the drive mechanism of Imoto in order to have a more stable carriage drive.

Conclusion


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 4,268,177 to Veale, U.S. Patent No. 5,678,936 to Hino, U.S. Patent No. 5,700,095 to Sugiyama and U.S. Patent No. 6,000,775 to Muraki each teach a guide shift mechanism having obvious similarities to the claimed subject matter.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill E. Culler whose telephone number is (571) 272-2159. The examiner can normally be reached on M-Th 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jec



Daniel J. Colilla
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